

REMARKS

Claims 1-11 are pending in this application of which claims 1, 7 and 10 are independent. Claims 1-11 stand rejected. In light of the following remarks and amendments, it is submitted that the claims are in a condition for allowance.

Claim Amendments

Claims 2 and 4 have been amended to correct a clerical error. Entry of these amendments is respectfully solicited.

Rejection of Claims 1, 2, 5, 7, 8 and 10 under §103(a)

The Examiner has rejected claims 1, 2, 5, 7, 8 and 10 under 35 U.S.C. §103(a) as being unpatentable over Yamamoto (U.S. Patent No. 6,078,293) in view of Utsunomiya et al. (U.S. Patent No. 6,426,468). The rejection is respectfully traversed.

Yamamoto, directed to an antenna apparatus for vehicles, is relied upon by the Examiner for teaching a transmitter 4, receiver 1 and controller 6. However, the Examiner acknowledges, and with which Applicant agrees, that Yamamoto does not disclose or suggest the receiver and controller formed on multilayer substrates. It follows that Yamamoto does not disclose or suggest “wherein at least one layer of the first multilayer substrate and at least one layer of the second multilayer substrate are electrically connected to a common ground,” as claim 1 recites.

The Examiner relies on Utsunomiya and alleges that Utsunomiya is in the same field of endeavor and discloses “a multilayer substrate that shares a common ground.” The Examiner contends that it would have been obvious to “use the multilayer substrate circuit of Utsunomiya et al. in the receiver and controller circuit of Yamamoto with the motivation for doing so would increase higher performance.”

Applicant respectfully disagrees.

The combination of references fails to teach each and every element of claim 1. It is again noted that Yamamoto does not disclose the receiver and controller formed on multilayer substrates and “wherein at least one layer of the first multilayer substrate and at least one layer of the second multilayer substrate are electrically connected to a common ground,” as claim 1 recites. Utsunomiya is directed to a circuit board comprising a substrate 1 having an upper face on which a die-pad 2 is formed and a bottom face on which a plurality of ball pads 9 are formed. (See Fig. 1, Col. 5:3-12 and Col. 6:9-12). Specific details of the formation of the circuit board are described in Cols. 5-6 of Utsunomiya. Basically, Utsunomiya teaches a circuit board in which the length of conductor patterns are made shorter by reducing the “zigzag” shapes of conductor lines as shown in Fig. 9 (prior art). This is accomplished by linearly forming conductor patterns 6 so that the length can be made 50% shorter than conventional lengths. (See Col. 5:57-59). Performance speed may be increased by providing shield lines between the conductor lines to balance the electromagnetic fields. (See Col. 5:59-65).

Utsunomiya fails to disclose or suggest “a first multilayer substrate” and “a second multilayer substrate” “wherein at least one layer of the first multilayer substrate and at least one layer of the second multilayer substrate are electrically connected to a common ground,” as claim 1 recites. Instead, Utsunomiya teaches a single substrate. On the upper surface is formed a die for receiving a semiconductor chip. On the bottom layer is formed ball pads for electrically connecting to the terminals of the semiconductor chip.

The Examiner seems to acknowledge this fact, and states the following:

One ordinary skill in the art understands that multilayer substrate circuit of Utsunomiya et al. is desirable in the receiver and controller circuit of Yamamoto because Yamamoto suggests a receiver (1) is connected to the controller (6) and both share a common ground (1B)...and Utsunomiya et al. suggest that a

circuit board is built from a multilayer substrate[] and copper layer is used as a common ground plane to which the semiconductor chip and conductor patterns are connected (col. 4 lines 44-67 and col. 5 lines 14-16).

First, the Examiner must provide some type of actual evidence of the “desirability” of using the multilayer substrate of Utsunomiya in the receiver and controller circuit of Yamamoto. Without supporting evidence, it is insufficient only to allege what one of the ordinary skill in the art may understand. The Examiner has failed to provide any motivation in this instance.

Second, the Examiner appears to refer to the statement in Utsunomiya that “the exposed copper layer is used as a common ground plane to which the semiconductor chip [(held by the die pad)] and conductor patterns are connected” for the proposition that Utsunomiya discloses “wherein at least one layer of the first multilayer substrate and at least one layer of the second multilayer substrate are electrically connected to a common ground.” To contrary, the Examiner takes an overly broad construction of Utsunomiya. It is readily understood that the conductor patterns connected to the copper ground layer in Utsunomiya do not constitute a multilayer substrate.

Third, assuming that the Examiner takes the position that the circuit board is a first multilayer substrate and the semiconductor chip which may be connected to the die pad is the second multilayer substrate, there is still no disclosure or suggestion that at least one layer of the first multilayer substrate (circuit board) and at least one layer of the second multilayer substrate (semiconductor chip) are electrically connected to a common ground, as claim 1 recites. In fact, there is absolutely no disclosure of the make up of the semiconductor chip. Without any other teaching, it is impossible to discern whether or not at least one layer of the semiconductor chip is electrically connected to a common ground, as claim 1 would require.

Moreover, it is the Examiner's burden to establish a *prima facie* case of obviousness. "To establish a *prima facie* case of obviousness, the [Examiner] must, *inter alia*, show 'some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teaches of the references.' *In re Fine*, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). 'The motivation, suggestion or teaching may come explicitly from statements in the prior art, the knowledge of one or ordinary skill in the art, or, on some cases the nature of the problem to be solved.' *Kotzab*, 217 F.3d at 1370, 55 USPQ2d at 1317.'" *In re Thrift*, 298 F.3d 1357 (Fed. Cir. 2002). In fact, "[t]he showing of a motivation to combine must be clear and particular, and it must be supported by actual evidence. *In re Dembiczak*, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999)." *Teleflex, Inc. v. Ficosa North American Corp.*, 299 F.3d 1313 (Fed. Cir. 2002).

The Examiner has not met these legal tenets. The motivation asserted by the Examiner ("to increase higher performance") is rather "matter of fact" and conclusory. Also, Utsunomiya increases performance by linearly forming conductor patterns 6 so that the length can be made 50% shorter than conventional lengths (See Col. 5:57-59), and providing shield lines between the conductor lines to balance the electromagnetic fields (See Col. 5:59-65). These modifications to increase performance have absolutely no relationship to the present invention. Instead, they relate to circuit board performance, which is not even a feature of the claim. There is no motivation to modify Yamamoto with multilayer circuit boards taught by Utsunomiya to hold Yamamoto's receiver and controller.

Applicant is left referring to his own specification for the asserted motivation cited by the Examiner. It is believed the Examiner has gleaned the motivation from Applicants specification in an attempt to maintain this obviousness rejection. However, "[d]etermination of obviousness

cannot be based on the hindsight combination of components selectively culled from the prior art to fit the parameters of the patented invention.’ *ATD Corp. v. Lydall, Inc.*, 159 F.3d 534, 546, 48 USPQ 2d 1321, 1329 (Fed. Cir. 1998).” *Crown Operations International, Ltd. v. Solutia Inc.*, 289 F.3d 1367 (Fed. Cir. 2002). The Examiner is advised that “[m]easuring a claimed invention against the standard established by section 103 required the often difficult but critical step of casting the mind back to the time of the invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then accepted wisdom in the field.” *In re Dembiczak*, 175 F.3d 994 (Fed. Cir. 1999). Applicant recognizes that today the subject invention may appear to be easily understood and less technologically complex. However, “[c]lose adherence to [the legal tenets of obviousness] is especially important in the case of less technologically complex inventions, where the very ease with which the invention can be understood may prompt one ‘to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher.’” *In re Dembiczak*.

Moreover, it is a well known legal tenet that to rely on a reference under 35 U.S.C. §103, it must be analogous art. “Two criteria are relevant in determining whether prior art is analogous: (1) whether the art is from the same field of endeavor, regardless of the problem, and (2) if the art is not within the same field of endeavor, whether it is still reasonably pertinent to the particular problem solved.” *Wang Laboratories, Inc. v. Toshiba Corp.*, 993 F.2d 858 (Fed. Cir. 1993).

“The claimed invention and the referenced patents are within the same field of endeavor if they have essentially the same function and structure.” *In re Deminski*, 796 F.2d 436 (Fed. Cir. 1986). As to claim 1, the invention relates to a keyless entry system. Figs. 1-5 are exemplary illustrations of such a keyless entry system. However, other embodiments are indeed

practical. Utsunomiya is directed to a circuit board. There is no relationship to a keyless entry system, or more generally, an antenna apparatus such as that disclosed by Yamamoto. Utsunomiya is not commensurate with the same field of endeavor.

Recall that if the art is not within the same field of endeavor, we must consider whether it is still reasonably pertinent to the particular problem solved. *In re Deminski*, 796 F.2d 436 (Fed. Cir. 1986). The problems solved in the case of the invention are described in the Background of the Invention section of the present application. One of those problems is poor reception. Adverting to Utsunomiya, it has nothing to do with this particular problem. In fact, it relates to a wholly different problem – the problem of decreased performance due to conductor line patterning. Applicant finds no relationship to the problems solved and those described by Utsunomiya. As such, Utsunomiya is non-analogous art.

The Examiner addressed independent claims 1, 7 and 10 commonly under the same rejection but only refers to the language of claim 1. Due to the similarities between the claims, Applicant submits that the remarks above apply to independent claims 7 and 10 as well. Additionally, claims 2, 5 and 8 are patentable at least based on dependency to claim 1 and 7 and for the reasons presented above.

In conclusion, the combination of the references fails to disclose or suggest the elements of claim 1 and other claims, the motivation provided by the Examiner is improper and has been gleaned from Applicant's own disclosure, and Utsunomiya is non-analogous art. At least for these reasons, the Examiner has failed to establish a *prima facie* case of obviousness. Withdrawal of the rejection is respectfully solicited.

Rejection of Claims 3 and 4 under §103(a)

The Examiner has rejected claims 3 and 4 under 35 U.S.C. §103(a) as being unpatentable over Yamamoto in view of Utsunomiya et al. and further in view of Japanese Patent Laid Open No. 8-216735. The rejection is respectfully traversed.

Claims 3 and 4 are patentable at least based on independent claim 1. Withdrawal of the rejection is respectfully solicited.

Rejection of Claims 6, 9 and 11 under §103(a)

The Examiner has rejected claims 6, 9 and 11 under 35 U.S.C. §103(a) as being unpatentable over Yamamoto in view of Utsunomiya et al. and further in view of Falbel (U.S. Patent No. 3,751,664). The rejection is respectfully traversed.

Claims 6, 9 and 11 are patentable at least based on independent claims 1, 7 and 10; however these claims are also patentable in light of the following analysis.

The Examiner alleges that Yamamoto in view of Utsunomiya discloses the keyless entry system of claims 1, 7 and 10. In this respect, Applicant's position is addressed above and will not be repeated here. However, the Examiner acknowledges that the combination does not disclose layers connected so as to exhibit a mirror effect for enhancing the receiving sensitivity of an antenna connected to the receiver, but alleges that "Falbel discloses the use[] of image reflecting of a mirror to improve the sensitivity of the detector." The Examiner alleges that it would have been obvious to modify the combination of Yamamoto and Utsunomiya with the teachings of Falbel in order "to improve the sensitivity of the detector (col. 3 lines 29-41)."

Applicant respectfully disagrees.

Falbel is directed to an infrared detector system, and more particularly, an improvement of a cone optics detector. To improve detection, “pyroelectric flake” 6 is mounted to the optic axis of the truncated cone 1 seen in Fig. 1. Additionally, a hemispherical cup-shaped mirror and detector flake may be mounted on the edge of the detector with its surfaces parallel to the optic axis. This is said to limit “dead zones” in the detector. The text cited by the Examiner provides that reflections from the hemispherical cup-shaped mirror create “double images” which serve to fill in some of the dead zones. As a result, the detector is said to have improved sensitivity.

Falbel has absolutely no relation to that which is claimed. Claim 6 recites “wherein at least one layer of the first multilayer substrate and at least one layer of the second multilayer substrate are electrically connected so as to exhibit a mirror effect for enhancing receiving sensitivity of an antenna connected to the receiver.” Claims 9 and 11 similarly recite this feature. Falbel improves sensitivity of a photoelectric detector by creating double images reflected from mirrors within the cone of the detector. Claim 6 requires electrically connecting at least one layer of the first multilayer substrate and at least one layer of the second multilayer substrate so was to exhibit a mirror effect for enhancing receiving sensitivity of the antenna connected to the receiver.

It is not understood how it is possible to combine teachings of a photoelectric detector with the other applied prior art disclosing an antenna apparatus for a vehicle and a circuit board. Specifically, the Examiner has not established how a hemispherical reflective mirror used in an optics detector can improve receiving sensitivity of an antenna on a receiver, as claimed. Also, a well known legal tenet is that references must be combinable, and if combined, the combination must be operable. Applicant submits that the references are not combinable.

The motivation asserted by the Examiner is to allow a receiver to have greater sensitivity. Falbel teaches increasing sensitivity of a photoelectric detector for optics, but this has no relationship to increasing sensitivity of an antenna for a receiver. Applicants emphasize that motivation must be “clear and particular, and it must be supported by actual evidence.” *Teleflex, Inc. v. Ficosa North American Corp.*, 299 F.3d 1313 (Fed. Cir. 2002). There is no actual evidence, which is clear and particular, with respect to increasing enhancing receiver sensitivity. The allegations made by the Examiner are baseless.

Applicant is left referring to his own specification for the asserted motivation cited by the Examiner. It is believed the Examiner has gleaned from Applicants specification in an attempt to maintain this obviousness rejection. As previously stated, “[d]etermination of obviousness cannot be based on the hindsight combination of components selectively culled from the prior art to fit the parameters of the patented invention.” *ATD Corp. v. Lydall, Inc.*, 159 F.3d 534, 546, 48 USPQ 2d 1321, 1329 (Fed. Cir. 1998).” *Crown Operations International, Ltd. v. Solutia Inc.*, 289 F.3d 1367 (Fed. Cir. 2002).

Applicant submits that the motivation provided by the Examiner has no actual support and is gleaned from Applicant’s own disclosure.

Moreover, recall that “[t]wo criteria are relevant in determining whether prior art is analogous: (1) whether the art is from the same field of endeavor, regardless of the problem, and (2) if the art is not within the same field of endeavor, whether it is still reasonably pertinent to the particular problem solved.” *Wang Laboratories, Inc. v. Toshiba Corp.*, 993 F.2d 858 (Fed. Cir. 1993).

The Examiner states that Falbel is “[i]n the same field of endeavor of image reflecting method, Falbel discloses the use[] of image reflecting of a mirror to improve the sensitivity of

the detector...” However, claim 6 relates to a keyless entry system; claim 9 relates to a keyless entry receiver; and claim 11 relates to an antenna for a keyless entry system. This field of endeavor have absolutely no relation to the field of optics, and more particularly, photoelectric detectors.

Considering whether the reference is still reasonably pertinent to the particular problem solved, one of those problems overcome by the present invention is poor receiver antenna reception. Again, Falbel relates to a completely different problem of increasing image detecting sensitivity of a photoelectric detector. Applicant finds no relationship to the problems solved and those described by Falbel. As such, Falbel is non-analogous art.

In conclusion, the combination of the references fails to disclose or suggest the elements of claims 6, 9 and 11, the motivation provided by the Examiner is improper and has been gleaned from Applicant’s own disclosure, and Utsunomiya is non-analogous art. At least for these reasons, the Examiner has failed to establish a *prima facie* case of obviousness. Withdrawal of the rejection is respectfully solicited.

Conclusions

For the above reasons, the claims are deemed to be in a condition for allowance. Should the Examiner have any comments or questions, he is requested to contact the undersigned in order to expedite prosecution of this case.

09/786,157

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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A handwritten signature in black ink, appearing to read "David M. Tennant", with a long, sweeping horizontal line extending to the right.

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